

CHECKLIST TO DESIGNATE AREAS OF EVALUATION FOR REQUESTS FOR PROPOSAL (RFP)

PROJECT MANAGER			JOB NUMBER (JN)	CONTROL SECTION (CS)
DESCRIPTION IF NO JN/CS				
MDOT PROJECT MANAGER: Check all items to be included in RFP. WHITE = REQUIRED GRAY SHADING = OPTIONAL <div style="text-align: center; border: 1px solid black; padding: 5px; margin-top: 10px;"> Check the appropriate Tier in the box below </div>			CONSULTANT: Provide only checked items below in proposal.	
TIER I (\$25,000-\$99,999)	TIER II (\$100,000-\$250,000)	TIER III (>\$250,000)		
			Understanding of Service	
			<i>Innovations</i>	
			<i>Safety Program</i>	
N/A			Organization Chart	
			Qualifications of Team	
			Past Performance	
Not required as part of official RFP	Not required as part of official RFP		Quality Assurance/Quality Control	
			Location of Service Personnel (Only check for on-site inspection services)	
N/A	N/A		Presentation	
N/A	N/A		Technical Proposal (if Presentation is required)	
3 pages including cover sheet (No Resumes)	7 pages	19 pages	Total maximum pages for RFP not including key personnel resumes	

**BUREAU OF HIGHWAYS
REQUEST FOR PROPOSAL
for
QUALIFICATIONS BASED SELECTION FOR PREQUALIFIED SERVICES**

The Michigan Department of Transportation (MDOT) is seeking professional services for the projects contained in the attached scopes of services.

If your firm is currently prequalified for this type of work and you are interested in providing services, please indicate your interest by submitting a Proposal. The Proposal must be submitted in accordance with the latest "Vendor Selection Guidelines for Service Contracts", available on the MDOT website.

Since there are two separate projects and two separate scopes of work, the two most qualified vendors will be selected to perform the engineering services described within the scopes. Due to the consistency of the scope of work between the two projects, each vendor will submit only ONE proposal for both projects.

For efficiency sake, we are asking that the vendor firm provide **3** paper copies of the Proposal to the MDOT project manager named in the attached scope of services.

These copies must be received by **12:00 PM, Monday, May 15, 2006.** Fax and electronic copies are not acceptable.

In addition, provide one **stapled** copy to:

Regular Mail:

Secretary, **Operations Contract Support**
Michigan Department of Transportation
P.O. Box 30050
Lansing, MI 48909

OR

Overnight Mail:

Secretary, **Operations Contract Support**
Michigan Department of Transportation
425 W. Ottawa
Lansing, MI 48933

This copy is to be received within three working days after the due date and time specified above. Please do not deliver in person.

Any questions relative to the scope of services must be submitted by e-mail to the MDOT project manager. Any questions must be asked at least three working days prior to the due date and time specified above. All questions and their answers will be placed on the MDOT

website as soon as possible after receipt of the questions. The names of vendors submitting questions will not be disclosed.

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

The selection team will review the information submitted and will select the two firms considered most qualified to perform the engineering services based on the proposals. The selected vendors will be contacted to confirm capacity. Upon confirmation, those firms will be asked to prepare a priced proposal. Negotiations will be conducted with the firms selected.

The maximum allowable pages for the proposal are limited to the selected Tier shown on MDOT Form 5100B, which is posted with this RFP. Page limits apply to the entire proposal. The number of pages per section is the decision of the creator of the proposal. Include in proposal only those items that are checked by the MDOT project manager on form 5100B.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

The scopes of services are attached to this solicitation.

PROJECT LOCATION: M-53 from 18 Mile to 24 Mile, Sterling Heights, Utica, and Shelby Township, Macomb County

CONTROL SECTION, JOB NUMBER: 50011, 50013-80921C

DESCRIPTION OF WORK: Patch and HMA overlay including signing, drainage work, and pavement marking.

I Primary Prequalification Classification:

Roadway Rehabilitation & Rural Freeways

II Secondary Prequalification Classification:

Road Design Surveys
Maintaining Traffic Plans and Provisions
Pavement Marking Plans
Permanent Freeway Traffic Signing Plans
Traffic Studies

The anticipated start date of the service is **September 30, 2006**

The anticipated completion date for the service is **November 7, 2008**

DBE Requirement: 10%

MDOT Project Manager:

Steven Minton, Cost & Scheduling Engineer
Macomb TSC
38257 Mound Road
Sterling Heights, MI 48310
Phone: (586) 978-1935
Fax: (586) 978-8075
Email: mintons@michigan.gov

SCOPE OF DESIGN SERVICES
CS 50011, 50013 – JN 80921C
M-53 from 18 Mile to 24 Mile
Sterling Heights, Utica, Shelby Township, Macomb County

I. SCOPE OF CONSULTANT DUTIES

Complete the design of this project including, but not limited to the following:

- A. Coordinate project plans with the consultant designing the adjacent M-53 resurfacing project JN 76905. See section XII for additional details.
- B. Perform design surveys.
- C. Perform a drainage study and related design of culverts. Videotape cross culverts.
- D. Perform safety analysis for design exception requests.
- E. Prepare required plans, typical cross-sections, details, and specifications required for design and construction.
- F. Compute and verify all plan quantities.
- G. Prepare staging plans and special provisions for maintaining traffic during construction.
- H. Prepare pavement marking plans and special provisions.
- I. Prepare permanent signing plans and special provisions for freeway sign upgrading.
- J. Provide solutions to any unique problems that may arise during the design of this project.
- K. The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

II. PROJECT LOCATION

The project is located on M-53, from 18 Mile Road to 24 Mile Road in Sterling Heights, Utica, Shelby Township, in Macomb County. The project length is 6.502 miles.

III. PROJECT DESCRIPTION

This project consists of all work related to designing this resurfacing project, including but not limited to the following:

- Resurfacing of existing concrete roadway including ramps
- Reconstructing shoulders
- Drainage improvements
- Sign replacement

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Road Design Manual, Standard Plans, Drainage Manual, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

IV. PROJECT CONSTRUCTION COST

A. The estimated cost of construction is:

1.	Safety Related Work	\$575,328
2.	Base, Surface and Shoulder	\$8,040,571
3.	Maintaining Traffic	\$1,473,245
4.	Permanent Pavement Markings/Signs	\$211,740
5.	Environmental	\$403,876
6.	Miscellaneous	\$2,944,240
CONSTRUCTION TOTAL		\$13,649,000 (scoped)
		\$12,909,000 (programmed)

B. The estimated cost of real estate is: \$0

The above construction total is the amount of funding programmed for this project. The Consultant is expected to design the project within the programmed amount.

If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Consultant will be required to submit a letter justifying the changes in the construction cost estimate.

V. PROJECT SCHEDULE

Authorization (approx.)	9/30/06
Plan Completion:	4/3/08
OEC Meeting:	4/24/08
Consultant Plan Turn In:	5/9/08
MDOT Plan Turn In:	8/18/08
Letting:	10/3/08
Final Deliverables	11/7/08

The Consultant shall determine the dates for the remaining project milestones (Base Plan Submittal, Preliminary Plan Submittal). The Consultant may be required to make plan changes after the Consultant Plan Turn In date due to specification updates and QA comments after the MDOT Plan Turn In.

VI. PAYMENT SCHEDULE

Compensation for this Scope of Design Services shall be on an actual cost plus fixed fee basis.

VII. MONTHLY PROGRESS REPORT

On the first of each month, the Consultant Project Manager shall submit a monthly project progress report to Steven Minton Project Manager. Periodic progress meetings will be scheduled between milestones

VIII. FORMAT

Full size plans (cut size 24" x 36") and half size (cut size 11" x 17") consisting of plan sheets and profile sheets will be required. The project will require a ratio (scale) of 1:50.

Other plan sheets that are required for this project shall be completed by the Consultant. These include, but are not limited to the following plan sheets:

- A. The title sheet. MDOT will provide a map of the area on a disk in our workstation format. If the map is not available, MDOT will provide a map that could be used. The Consultant shall be responsible for any revisions to the title sheet and the title sheet and map shall meet MDOT format and layout guidelines.
- B. Note Sheet.
- C. Typical Cross-Sections.
- D. Project specific Special Details.

- E. Construction staging and traffic control plans.
- F. Detail grade sheets for major intersections, ramp gores and critical areas.
- G. Paving details.
- H. Pavement marking plan(s).
- I. Culvert detail sheet(s).
- J. Vicinity and drainage map sheet.
- K. Alignment sheet.
- L. Witness and benchmark sheet(s).
- M. Soil boring log sheet(s).

All plans, special provisions, estimates, and other project related items shall meet all MDOT requirements and detailing practices (i.e., format, materials, symbols, patterns, and layout) or as otherwise directed by the Project Manager.

All plans, specifications, and other project related items are subject to review and approval by MDOT.

IX. UTILITIES

The Consultant shall be responsible for obtaining and showing on the plans the location and names of all existing utilities within the limits of the project. In the course of resolving utility conflicts, the Consultant shall make modifications to the plans or design details and provide assistance as directed by the MDOT Utility Permits Engineer and/or Project Manager. The Consultant shall attend any utility meetings called to ensure that the concerns are addressed on the plans involving utilities. The Consultant shall assist in the review of utility permit requests to ensure compatibility with the project.

The consultant will compile all utility information on the base plans. A list of potential utility conflicts will be submitted to the MDOT project manager in preparation for the utility coordination meeting.

X. TRAFFIC CONTROL AND MDOT PERMITS

The Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Project Scope of Design Services.

The Consultant shall be responsible for obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW). This information can be obtained through Macomb TSC (586) 978-1935

XI. PRE-QUALIFICATION AND SUBCONTRACTING OF CONTRACT WORK

Any task(s) for which the Consultant is not prequalified must be completed by a Subcontractor that is pre-qualified for that task(s).

The Department's prequalification is not a guarantee or warranty of the subcontractor's ability to perform or complete the work subcontracted. The Consultant remains fully responsible to the Department for completion of the work according to the authorization as if no portion of it had been subcontracted.

All subcontractor communications with the Department shall be through the Consultant to the MDOT Project Manager. This requirement may be waived if a written communication plan is approved by the MDOT Project Manager.

The Department may direct the immediate removal of any subcontractor working in violation of this subsection. Any costs or damages incurred are assumed by the Consultant by acceptance of the authorization. It is further understood that the Consultant's responsibilities in the performance of the contract, in case of an approved subcontract, are the same as if the Consultant had handled the work with the Consultant's own organization.

XII. CONSULTANT RESPONSIBILITIES (GENERAL)

PPMS Task Number	Description
2155	Perform Safety Analysis
3330	Conduct Design Survey (See Attachment A)
3360	Prepare Base Plans (See Attachment C)
3380	Review Base Plans
3390	Develop the Maintaining Traffic Concepts
3522	Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance (See Attachment B)
3540	Develop the Maintaining Traffic Plan
3552	Develop Preliminary Permanent Pavement Markings

3554	Develop Preliminary Freeway Signing Plan
3580	Develop Preliminary Plans
3610	Compile Utility Information
3720	Submit Environmental Permit Applications
3822	Complete Permanent Pavement Marking Plan
3824	Complete Freeway Signing Plan
3830	Complete the Maintaining Traffic Plan
3840	Develop Final Plans and Specifications
3870	Hold Omissions/Errors Check (OEC) Meeting

The project package will include plans for the M-53 resurfacing from 18 Mile to 24 Mile (50011-80921) along with the plans for the M-53 resurfacing from 24 Mile to 27 Mile Roads (50013-76905). Plans for JN 80921 and 76905 will be developed simultaneously by different Consultants and will follow the same design schedule with combined Scope Verification, Base Plan, Plan Review, and OEC meetings. The Consultants on both projects will be expected to coordinate the plan elements which will overlap such as the Special Provision for Maintaining Traffic, typical plan sheets, Frequently Used Special Provisions, and unique special provisions. The Consultant for JN 80921 will be responsible for coordinating and delivering the total project package to the Project Manager for each milestone submittal and the final package. The Consultant for JN 76905 shall submit deliverables to the Consultant for JN 80921 for each milestone submittal and the final package.

Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Consultant shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.

Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.

The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

The consultant shall identify the locations of any water main and/or sanitary sewer on the project. If watermain and/or sanitary sewers are present within the project limits, the CONSULTANT shall evaluate the necessity for the relocation of water mains and sanitary sewers, in accordance with Design Division's Informational Memorandum #441B and #402R dated April 13, 1992. The CONSULTANT shall submit a report to Steven J. Urda, Design Engineer - Municipal Utilities, Design Division for review and concurrence. A copy of the report shall be sent to the Project Manager. **If relocation is necessary and watermain and/or sanitary sewer work is not part of the Scope Of Work, contact the MDOT Project Manager immediately.**

If excavation is required, submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Preliminary Project Assessment (PPA).

The Consultant shall be required to prepare and submit a CPM network for the construction of this project.

Consultant shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for the Base Plan Review Meeting (if meeting necessary) and The Plan Review Meeting.

Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. May require the preparation of displays such as maps, marked-up plans, etc.

Prepare and submit any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring any permit (ie. NPDES, DEQ, etc), approvals (ie. county drain commission) and related mitigation. MDOT will submit permit requests.

Attend any project-related meetings as directed by the MDOT Project Manager.

The Consultant shall assist in the review of driveway and utility permit requests, incorporate the information in the design plans and respond within 2 weeks from receipt of the permit.

The MDOT Project Manager shall be the official MDOT contact person for the Consultant **and shall be made aware of all communications regarding this project.** The Consultant must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.

The Consultant shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.

XIII. MDOT RESPONSIBILITIES (GENERAL)

Schedule and/or conduct the following:

1. Project related meetings.
2. The Plan Review
3. Utility Meetings.
4. Quantity summary sheets and final item cost estimates.
5. Packaging of plans and proposal.

Furnish Special Details and pertinent reference materials.

Furnish prints of an example of a similar project and old plans of the area, if available.

Supply information on existing pavement structure as necessary.

Coordinate any necessary utility relocations.

Furnish pavement core information (Consultant shall place information on plan sheets).

Furnish soil boring information as necessary (Consultant shall place information on plan sheets).

Pavement design will be furnished by MDOT.

Furnish diskette of file and instructions for the MDOT Stand Alone Estimator's Worksheet (SAEW).

VENDOR PAYMENT:

All invoices/bills for services must be directed to the Department and follow the 'then current' guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's Bulletin Board System. This document contains instructions and forms that must be followed and used for invoicing/billing; payment may be delayed or decreased if the instructions are not followed.

Payment to the Vendor for Services rendered shall not exceed the "Cost Plus Fixed Fee Not to Exceed Maximum Amount" unless an increase is approved in accordance with the contract with the Vendor. All invoices/bills must be submitted within 14 calendar days of the last date of services being performed for that invoice.

Direct expenses will not be paid in excess of that allowed by the Department for its own employees. Supporting documentation must be submitted, with the invoice/bill, for all billable expenses on the Project. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the CE activities of this Project. Hours spent in administrative, clerical, or accounting roles for billing and support, are not considered allowable hours; there will be no reimbursement for these hours.

ATTACHMENT A
CS 50011, 50013 – JN 80921C
M-53 from 18 Mile to 24 Mile
Sterling Heights, Utica, Shelby Township, Macomb County

SURVEY SCOPE OF WORK

Survey Mapping Limits: As needed for Design

NOTES: The consultant surveyor shall discuss the scope of this survey with the consultant design engineer before initiating any work on this project. A detailed Survey Work Plan with an estimate of hours by specific survey task such as traversing, leveling, mapping, etc, **must** be included in the project proposal.

It is the responsibility of the Professional Surveyor to safeguard all corners of the United States Public Land Survey System, published Geodetic Control and any other Property Controlling corners that may be in danger of being destroyed by the proposed construction project.

GENERAL REQUIREMENTS:

1. Surveys must comply with **all Michigan law** relative to land surveying.
2. Surveys must be done under the **direct supervision** of a Professional Surveyor licensed to practice in the State of Michigan.
3. Work in any of the following categories of survey: Road Design, Bridge, Hydraulic, Right-of-Way, Ground Control (Photogrammetric), and/or Geodetic control, must be completed by a survey firm which is pre-qualified by MDOT.
4. Surveys must meet all requirements of the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998. Please contact the Design Survey office to clarify any specific questions regarding these standards.
5. Consultants must obtain all necessary permits, including an up-to-date permit from the MDOT Utilities Coordination and Permits Section, required to perform this survey on any public and/or private property.
6. The consultant must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job.

7. Consultants are responsible for a comprehensive and conscientious research of all records, including MDOT records, essential for the completion of this project.
8. Measurements, stationing, recorded data, and computations must be in metric units, unless specified otherwise by the Project Manager.
9. Coordinate values shall be based upon the Michigan State Plane coordinate system NAD83. This requirement *may* be waived if GPS is not available. If terrestrial traverse methods are employed, and NGS control is not available within 6 km., a local project coordinate control system may be accepted. All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88) if control is available within 6 km. If not, existing MDOT plan datum is acceptable. Other datums must be approved by the MDOT Design Division, Supervising Land Surveyor. A preliminary submittal of the adjusted Horizontal and Vertical control for the project may be submitted to the Survey Consultant Project Manager for review and acceptance as soon as it is available.
10. The survey notes must be submitted to the Design Survey Unit in 10" (254 mm) by 12" (305 mm) divided portfolios with flap covers. As many portfolios should be used as needed to contain all of the required documents and diskettes
11. Each portfolio must be labeled on the outside as in the following example:

Survey Notes for:

Route, Location and Project Limits [I-94 under Beaubien Street]

Control Section [S06-82024] Job Number [45197D] Date [*of submittal*]

By [*Name of Firm*]

Michigan Professional Surveyor [] License # []

12. Each submittal is to be divided into five sections. These sections are to be labeled as follows: **Administrative, Alignment, Control, Property,** and **Miscellaneous.**
 - a. The administrative section will include the following items: a completed copy of the MDOT Form 222(3/99) entitled ASURVEY NOTES: RECEIPT AND TRANSMITTAL; the limits of the survey and original survey scope as determined by the consultant Surveyor and Design Engineer; a complete synopsis of the survey **that shall include, but not be limited to** horizontal and vertical control datums used, methodology, a complete discussion of government corners recovered, perpetuated or otherwise used as part of the survey, problems encountered, and a statement of certification from the consultant surveyor supervising the project as to compliance with Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998; as well as documentation of all project specific meetings and /or conversations with MDOT Survey personnel.

- b. The Alignment section will contain a sketch of the alignment, witnesses and stationing of alignment points set or found; an explanation of how the alignment was determined, whether best fit or legal; and all supporting documentation.
 - c. The Control section contains the data collected and copies of all research documents used to establish the **horizontal and vertical** reference systems for the project, and includes a thorough written explanation describing how the systems were established. This section should also contain a complete list of control coordinates, control traverse raw data, least squares analysis for both traverse and benchmarks, a separate listing of control point coordinates and witnesses for mapping and construction staking of the project. A complete Benchmark list with datum, station and offset, elevation, and description of each benchmark shall also be included. This information must be submitted in hardcopy and ASCII electronic file format on 88.9 mm (3.5") HD diskettes. Also, a sketch of the control traverse, showing any ties (government corners, property, alignment, etc.) shall be included in this section.
 - d. The Property section contains all information that is utilized regarding the real property affected by the project, and all necessary property ties. This may include copies of all **recorded** land corner recordation certificates for the government corners used or reestablished, recorded plats, recorded certified surveys, tax maps, tax descriptions, and adjacent/riparian owners.
 - e. The Miscellaneous section contains any information not included in the previous sections. The surveyor's project report should specify any items included in this section.
13. A portfolio may contain several types of data but, no section is to contain more than a single type (i.e., Bridge surveys separate from Road surveys and Hydraulic surveys). All sheets in a portfolio must be marked with the control section, job number, portfolio section name and page number. Diskettes must be labeled with the control section, job number, data type and file names.
14. The Consultant representative shall record and submit typewritten minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees.
15. The MDOT Project Manager is the official contact for the Consultant. The Consultant must either address, or send a copy of all correspondence to the MDOT Project Manager. The MDOT Project Manager shall be made aware of all communications regarding this project. Any survey related questions, in regard to this project, should be directed to a Survey Consultant Coordinator.

At the completion of this survey and prior to beginning the design of this project, all field survey notes, all electronic data, and all research records obtained for this project will be considered the

property of MDOT and **must be sent to** the MDOT, Design Division, Supervising Land Surveyor, P.O. Box 30050, Lansing, MI 48909. Please use MDOT's Form 222(3/99) entitled ASURVEY NOTES: RECEIPT AND TRANSMITTAL for all transmittals. A copy of this transmittal form must also be sent to the Project Manager. It is highly recommended that the project's survey portfolios be submitted for review as soon as possible.

FIELD SURVEY

The purpose of the field survey is to obtain all information and data required by the project design engineer, to leave control in the field for future construction staking, and to provide a sufficient history of the area to enable the MDOT Design Survey Unit to perform dependable surveys in the future. The consultant surveyor must discuss the scope of this survey with the project design engineer before initiating any work on this project. Notes of this meeting and a detailed Survey Work Plan with an estimate of hours broken down by specific survey task must be submitted to the Project Manager and Consultant Coordinator within two weeks of this meeting.

The consultant surveyor must contact the County Remonumentation Representative prior to beginning work on the project to inform him of proposed corner perpetuation activities, and to obtain information pertinent to PLSS corners and/or property controlling corners affected by project construction.

FINAL REPORT: DELIVERABLES

The final report for this project shall include the following:

1. In the first pocket of the first portfolio, MDOT's Form 222(3/99) entitled ASURVEY NOTES: RECEIPT AND TRANSMITTAL, and the projects Professional Surveyor's Report on company letterhead consisting of the following:
 - a. A comprehensive report, written and signed by the project's Professional Surveyor, of the work performed on this project.
 - b. The source and the methods used to establish the project horizontal coordinates, elevations, and the alignment(s) for this project.
 - c. A detailed explanation of anything discovered during the survey of this project that may create a problem for the designer or another surveyor.
2. Coordinate and witness lists for the horizontal alignment ties, government corners, traverse control points, and bench marks.
3. A sketch of the alignment with reference points and angle of crossing (if appropriate), horizontal coordinates, curve data, and a station equation to existing stationing in feet.

4. Least squares analysis for horizontal and vertical control.
5. Documentation of horizontal and vertical datum sources.
6. Control sketch with control points, government corners and alignment plotted.
7. All field survey notes, all electronic survey data files, all calculation sketches, and all research records obtained for this project. All electronic survey data files shall be submitted on 88.9 mm (3.5") HD diskettes only, specifically labeled. No paper copy of raw survey data is required.
8. Legible copies of all **recorded** Land Corner Recordation Certificates (with Liber and Page number) filed or used for the performance of this survey, and for any PLSS corners, including Property Controlling Corners, which may be disturbed by construction.
9. It is the responsibility of the consultant to insure that all electronic files submitted to MDOT conform to the required format and all documents are legible.
10. The consultant must organize and label the various sections of the portfolios as required by the MDOT Design Surveys *Standards of Practice* dated April 1, 1998.
11. It is not necessary to submit mapping data in the survey portfolio for a consultant survey/consultant design in the same authorization.

ATTACHMENT B
CS 50011, 50013 – JN 80921C
M-53 from 18 Mile to 24 Mile
Sterling Heights, Utica, Shelby Township, Macomb County

SCOPE OF WORK FOR DRAINAGE STUDY

The consultant is to conduct a site investigation of the drainage within the limits of the project. The purpose of this study is to determine where hydraulic analyses and/or surveys are required.

If further hydraulic analyses and/or surveys are required, then MDOT will issue a separate authorization for those services.

Work Steps:

1. Prepare a typed report summarizing the drainage affected by the project. For every culvert carrying natural drainage within the MDOT Right-of-Way, provide the following information:
 - a. Stream name
 - b. Exact location of the culvert, including Section, Town, Range, and Township
 - c. Size, type, and condition of culvert
 - d. Any evidence of scour or erosion
 - e. Any evidence that the structure is undersized
 - f. Any county drains
 - g. Photographs of the upstream face, downstream face, looking upstream, and looking downstream, as well as any drainage structures, buildings, or farmland that may affect or be affected by the culvert
 - h. Drainage area, including delineation on a USGS quadrangle map (or local contour map, if more up-to-date)
 - i. Type of work proposed, including existing and proposed lengths
2. The report must include any other effects on the drainage; for example, a raise in road grade or widening.
3. Submit the drainage study to the MDOT Project Manager for review and approval by the Design Engineer - Hydraulics/Hydrology.
4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
5. Make necessary changes and resubmit the incomplete items, including a written response to all comments.

ATTACHMENT C
CS 50011, 50013 – JN 80921C
M-53 from 18 Mile to 24 Mile
Sterling Heights, Utica, Shelby Township, Macomb County

VIDEO PHOTOGRAPHY SCOPE OF WORK

NOTES: The consultant shall discuss the scope of this video photography with the MDOT Project Manager before initiating any work on this project. A detailed Work Plan with estimate of hours **must** be included in the project proposal. This scope of work shall be part of **P/PMS TASK 3360**.

GENERAL CONDITIONS AND SPECIFICATIONS FOR VIDEO RECORDING STORM SEWERS:

1. All mainline and ramp cross culverts will be video recorded.
2. Video recordings shall be performed during minimal storm water flow periods in order to maximize picture quality. The television camera and lighting shall be specifically designed for storm sewer inspection and recording. All video recordings shall be in VHS color.
3. The consultant or contractor shall provide labor, equipment, and material to clean each storm sewer necessary in order to video record a clear, precise picture of the storm sewer conditions. For the disposal of the waste generated from the cleaning refer to Supplemental Specification 403(1). The labor, equipment, and materials necessary for the cleaning shall be include removal, transportation, and disposal of the debris at no extra cost. **The Department shall not be held liable for the loss or damage to any of the contractor's labor, equipment, or materials.**
4. The camera shall be moved through the line, in either direction, at a rate no greater than 9.144-meters (30-feet) per minute. Stopping may be necessary to properly document the sewer's condition. Winches, TV Cable, rewind, and other devices must not obstruct the camera view or interfere with proper documentation. If during the inspection, the camera will not pass through an entire section, the contractor shall set up his equipment to enter from the opposite opening. If again, the camera fails to pass through, the inspection shall be considered complete. The camera shall be capable of rotating from side to side to provide views of joint openings

5. All traffic control and traffic control devices to videotape shall be provided by the consultant or its contractor.
6. The contractor shall observe good housekeeping practices at all times during his operations at no extra cost.
7. In the event hazardous materials become an issue; testing and disposal fees will be negotiated separated to this agreement.

FINAL DELIVERABLES

The consultant shall provide, the Department **three (3)** copies of the video recording and written reports. Measurements of the total sewer length and locations of noted sewer defects shall be recorded on the video tape **and** on the written report describing the findings. **The consultant shall include in the written report, recommendations of storm sewer areas that need to be reconstructed. Based on these findings, MDOT will determine at which location storm sewers will be reconstructed.**

Video tapes and reports will be submitted to the MDOT Project Manager two (2) weeks prior to Base Plan submittal. The tapes shall be edited and have audio production. Once submitted, title to the tape recordings shall become the property of the Department.

PROJECT LOCATION: M-53 from 24 Mile to 27 Mile, Shelby and Washington Township, Macomb County

CONTROL SECTION, JOB NUMBER: 50013-76905C

DESCRIPTION OF WORK: Patch and HMA overlay including signing, drainage work, pavement marking and reconstructing pavement under bridges over M-53.

I Primary Prequalification Classification:

Roadway Rehabilitation & Rural Freeways

II Secondary Prequalification Classification:

Road Design Surveys
Maintaining Traffic Plans and Provisions
Pavement Marking Plans
Permanent Freeway Traffic Signing Plans
Traffic Studies

The anticipated start date of the service is **September 30, 2006**

The anticipated completion date for the service is **November 7, 2008**

DBE Requirement: 10%

MDOT Project Manager:

Steven Minton, Cost & Scheduling Engineer
Macomb TSC
38257 Mound Road
Sterling Heights, MI 48310
Phone: (586) 978-1935
Fax: (586) 978-8075
Email: mintons@michigan.gov

SCOPE OF DESIGN SERVICES
CS 50013 – JN 76905C
M-53 from 24 Mile to 27 Mile
Shelby Township, Washington Township, Macomb County

I. SCOPE OF CONSULTANT DUTIES

Complete the design of this project including, but not limited to the following:

- A. Coordinate project plans with the Consultant designing the adjacent M-53 resurfacing project JN 82901. See section XII for additional details.
- B. Perform design surveys.
- C. Perform a drainage study and related design of culverts. Videotape cross culverts.
- D. Perform safety analysis for design exception requests.
- E. Prepare required plans, typical cross-sections, details, and specifications required for design and construction.
- F. Compute and verify all plan quantities.
- G. Prepare staging plans and special provisions for maintaining traffic during construction.
- H. Prepare pavement marking plans and special provisions.
- I. Prepare permanent signing plans and special provisions for freeway sign upgrading.
- J. Provide solutions to any unique problems that may arise during the design of this project.
- K. The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

II. PROJECT LOCATION

The project is located on M-53, from 24 Mile Road to 27 Mile Road in Shelby Township and Washington Township, Macomb County. The project length is 3.140 miles.

III. PROJECT DESCRIPTION

This project consists of all work related to designing this resurfacing project, including but not limited to the following:

- Resurfacing of existing concrete roadway including ramps
- Reconstructing shoulders
- Reconstructing roadway
- Drainage improvements
- Sign replacement

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Road Design Manual, Standard Plans, Drainage Manual, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

IV. PROJECT CONSTRUCTION COST

A. The estimated cost of construction is:

1.	Safety Related Work	\$371,735
2.	Base, Surface and Shoulder	\$5,690,182
3.	Maintaining Traffic	\$432,260
4.	Permanent Pavement Markings/Signs	\$87,387
5.	Environmental	\$10,851
6.	Miscellaneous	\$1,424,657
CONSTRUCTION TOTAL		\$8,017,072 (scoped)
		\$8,017,000 (programmed)

B. The estimated cost of real estate is: \$0

The above construction total is the amount of funding programmed for this project. The Consultant is expected to design the project within the programmed amount.

If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Consultant will be required to submit a letter justifying the changes in the construction cost estimate.

V. PROJECT SCHEDULE

Authorization (approx.)	9/30/06
Plan Completion:	4/3/08
OEC Meeting:	4/24/08
Consultant Plan Turn In:	5/9/08
MDOT Plan Turn In:	8/18/08
Letting:	10/3/08
Final Deliverables	11/7/08

The Consultant shall determine the dates for the remaining project milestones (Base Plan Submittal, Preliminary Plan Submittal). The Consultant may be required to make plan changes after the Consultant Plan Turn In date due to specification updates and QA comments after the MDOT Plan Turn In.

VI. PAYMENT SCHEDULE

Compensation for this Scope of Design Services shall be on an actual cost plus fixed fee basis.

VII. MONTHLY PROGRESS REPORT

On the first of each month, the Consultant Project Manager shall submit a monthly project progress report to Steven Minton Project Manager. Periodic progress meetings will be scheduled between milestones

VIII. FORMAT

Full size plans (cut size 24" x 36") and half size (cut size 11" x 17") consisting of plan sheets and profile sheets will be required. The project will require a ratio (scale) of 1:50.

Other plan sheets that are required for this project shall be completed by the Consultant. These include, but are not limited to the following plan sheets:

- A. The title sheet. MDOT will provide a map of the area on a disk in our workstation format. If the map is not available, MDOT will provide a map that could be used. The Consultant shall be responsible for any revisions to the title sheet and the title sheet and map shall meet MDOT format and layout guidelines.
- B. Note Sheet.
- C. Typical Cross-Sections.
- D. Project specific Special Details.

- E. Construction staging and traffic control plans.
- F. Detail grade sheets for major intersections, ramp gores and critical areas.
- G. Paving details.
- H. Pavement marking plan(s).
- I. Culvert detail sheet(s).
- J. Vicinity and drainage map sheet.
- K. Alignment sheet.
- L. Witness and benchmark sheet(s).
- M. Soil boring log sheet(s).

All plans, special provisions, estimates, and other project related items shall meet all MDOT requirements and detailing practices (i.e., format, materials, symbols, patterns, and layout) or as otherwise directed by the Project Manager.

All plans, specifications, and other project related items are subject to review and approval by MDOT.

IX. UTILITIES

The Consultant shall be responsible for obtaining and showing on the plans the location and names of all existing utilities within the limits of the project. In the course of resolving utility conflicts, the Consultant shall make modifications to the plans or design details and provide assistance as directed by the MDOT Utility Permits Engineer and/or Project Manager. The Consultant shall attend any utility meetings called to ensure that the concerns are addressed on the plans involving utilities. The Consultant shall assist in the review of utility permit requests to ensure compatibility with the project.

The consultant will compile all utility information on the base plans. A list of potential utility conflicts will be submitted to the MDOT project manager in preparation for the utility coordination meeting.

X. TRAFFIC CONTROL AND MDOT PERMITS

The Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Project Scope of Design Services.

The Consultant shall be responsible for obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW). This information can be obtained through Macomb TSC (586) 978-1935

XI. PRE-QUALIFICATION AND SUBCONTRACTING OF CONTRACT WORK

Any task(s) for which the Consultant is not prequalified must be completed by a Subcontractor that is pre-qualified for that task(s).

The Department's prequalification is not a guarantee or warranty of the subcontractor's ability to perform or complete the work subcontracted. The Consultant remains fully responsible to the Department for completion of the work according to the authorization as if no portion of it had been subcontracted.

All subcontractor communications with the Department shall be through the Consultant to the MDOT Project Manager. This requirement may be waived if a written communication plan is approved by the MDOT Project Manager.

The Department may direct the immediate removal of any subcontractor working in violation of this subsection. Any costs or damages incurred are assumed by the Consultant by acceptance of the authorization. It is further understood that the Consultant's responsibilities in the performance of the contract, in case of an approved subcontract, are the same as if the Consultant had handled the work with the Consultant's own organization.

XII. CONSULTANT RESPONSIBILITIES (GENERAL)

PPMS Task Number	Description
2155	Perform Safety Analysis
3330	Conduct Design Survey (See Attachment A)
3360	Prepare Base Plans (See Attachment C)
3380	Review Base Plans
3390	Develop the Maintaining Traffic Concepts
3522	Conduct Hydraulic/Hydrologic Analysis for Storm Water Conveyance (See Attachment B)
3540	Develop the Maintaining Traffic Plan
3552	Develop Preliminary Permanent Pavement Markings

3554	Develop Preliminary Freeway Signing Plan
3580	Develop Preliminary Plans
3610	Compile Utility Information
3720	Submit Environmental Permit Applications
3822	Complete Permanent Pavement Marking Plan
3824	Complete Freeway Signing Plan
3830	Complete the Maintaining Traffic Plan
3840	Develop Final Plans and Specifications
3870	Hold Omissions/Errors Check (OEC) Meeting

The project package will include plans for the M-53 resurfacing from 18 Mile to 24 Mile (50011-80921) along with the plans for the M-53 resurfacing from 24 Mile to 27 Mile Roads (50013-76905). Plans for JN 80921 and 76905 will be developed simultaneously by different Consultants and will follow the same design schedule with combined Scope Verification, Base Plan, Plan Review, and OEC meetings. The Consultants on both projects will be expected to coordinate the plan elements which will overlap such as the Special Provision for Maintaining Traffic, typical plan sheets, Frequently Used Special Provisions, and unique special provisions. The Consultant for JN 80921 will be responsible for coordinating and delivering the total project package to the Project Manager for each milestone submittal and the final package. The Consultant for JN 76905 shall submit deliverables to the Consultant for JN 80921 for each milestone submittal and the final package.

Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Consultant shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.

Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.

The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.

The consultant shall identify the locations of any water main and/or sanitary sewer on the project. If watermain and/or sanitary sewers are present within the project limits, the CONSULTANT shall evaluate the necessity for the relocation of water mains and sanitary sewers, in accordance with Design Division's Informational Memorandum #441B and #402R dated April 13, 1992. The CONSULTANT shall submit a report to Steven J. Urda, Design Engineer - Municipal Utilities, Design Division for review and concurrence. A copy of the report shall be sent to the Project Manager. **If relocation is necessary and watermain and/or sanitary sewer work is not part of the Scope Of Work, contact the MDOT Project Manager immediately.**

If excavation is required, submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Preliminary Project Assessment (PPA).

The Consultant shall be required to prepare and submit a CPM network for the construction of this project.

Consultant shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for the Base Plan Review Meeting (if meeting necessary) and The Plan Review Meeting.

Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. May require the preparation of displays such as maps, marked-up plans, etc.

Prepare and submit any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring any permit (ie. NPDES, DEQ, etc), approvals (ie. county drain commission) and related mitigation. MDOT will submit permit requests.

Attend any project-related meetings as directed by the MDOT Project Manager.

The Consultant shall assist in the review of driveway and utility permit requests, incorporate the information in the design plans and respond within 2 weeks from receipt of the permit.

The MDOT Project Manager shall be the official MDOT contact person for the Consultant **and shall be made aware of all communications regarding this project.** The Consultant must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.

The Consultant shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.

XIII. MDOT RESPONSIBILITIES (GENERAL)

Schedule and/or conduct the following:

1. Project related meetings.
2. The Plan Review
3. Utility Meetings.
4. Quantity summary sheets and final item cost estimates.
5. Packaging of plans and proposal.

Furnish Special Details and pertinent reference materials.

Furnish prints of an example of a similar project and old plans of the area, if available.

Supply information on existing pavement structure as necessary.

Coordinate any necessary utility relocations.

Furnish pavement core information (Consultant shall place information on plan sheets).

Furnish soil boring information as necessary (Consultant shall place information on plan sheets).

Pavement design will be furnished by MDOT.

Furnish diskette of file and instructions for the MDOT Stand Alone Estimator's Worksheet (SAEW).

VENDOR PAYMENT:

All invoices/bills for services must be directed to the Department and follow the 'then current' guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's Bulletin Board System. This document contains instructions and forms that must be followed and used for invoicing/billing; payment may be delayed or decreased if the instructions are not followed.

Payment to the Vendor for Services rendered shall not exceed the "Cost Plus Fixed Fee Not to Exceed Maximum Amount" unless an increase is approved in accordance with the contract with the Vendor. All invoices/bills must be submitted within 14 calendar days of the last date of services being performed for that invoice.

Direct expenses will not be paid in excess of that allowed by the Department for its own employees. Supporting documentation must be submitted, with the invoice/bill, for all billable expenses on the Project. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the CE activities of this Project. Hours spent in administrative, clerical, or accounting roles for billing and support, are not considered allowable hours; there will be no reimbursement for these hours.

ATTACHMENT A
CS 50013 – JN 76905C
M-53 from 24 Mile to 27 Mile
Shelby Township, Washington Township, Macomb County

SURVEY SCOPE OF WORK

Survey Mapping Limits: As needed for Design

NOTES: The consultant surveyor shall discuss the scope of this survey with the consultant design engineer before initiating any work on this project. A detailed Survey Work Plan with an estimate of hours by specific survey task such as traversing, leveling, mapping, etc, **must** be included in the project proposal.

It is the responsibility of the Professional Surveyor to safeguard all corners of the United States Public Land Survey System, published Geodetic Control and any other Property Controlling corners that may be in danger of being destroyed by the proposed construction project.

GENERAL REQUIREMENTS:

1. Surveys must comply with **all Michigan law** relative to land surveying.
2. Surveys must be done under the **direct supervision** of a Professional Surveyor licensed to practice in the State of Michigan.
3. Work in any of the following categories of survey: Road Design, Bridge, Hydraulic, Right-of-Way, Ground Control (Photogrammetric), and/or Geodetic control, must be completed by a survey firm which is pre-qualified by MDOT.
4. Surveys must meet all requirements of the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998. Please contact the Design Survey office to clarify any specific questions regarding these standards.
5. Consultants must obtain all necessary permits, including an up-to-date permit from the MDOT Utilities Coordination and Permits Section, required to perform this survey on any public and/or private property.
6. The consultant must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job.

7. Consultants are responsible for a comprehensive and conscientious research of all records, including MDOT records, essential for the completion of this project.
8. Measurements, stationing, recorded data, and computations must be in metric units, unless specified otherwise by the Project Manager.
9. Coordinate values shall be based upon the Michigan State Plane coordinate system NAD83. This requirement *may* be waived if GPS is not available. If terrestrial traverse methods are employed, and NGS control is not available within 6 km., a local project coordinate control system may be accepted. All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88) if control is available within 6 km. If not, existing MDOT plan datum is acceptable. Other datums must be approved by the MDOT Design Division, Supervising Land Surveyor. A preliminary submittal of the adjusted Horizontal and Vertical control for the project may be submitted to the Survey Consultant Project Manager for review and acceptance as soon as it is available.
10. The survey notes must be submitted to the Design Survey Unit in 10" (254 mm) by 12" (305 mm) divided portfolios with flap covers. As many portfolios should be used as needed to contain all of the required documents and diskettes
11. Each portfolio must be labeled on the outside as in the following example:

Survey Notes for:

Route, Location and Project Limits [I-94 under Beaubien Street]

Control Section [S06-82024] Job Number [45197D] Date [*of submittal*]

By [*Name of Firm*]

Michigan Professional Surveyor [] License # []

12. Each submittal is to be divided into five sections. These sections are to be labeled as follows: **Administrative, Alignment, Control, Property, and Miscellaneous.**
 - a. The administrative section will include the following items: a completed copy of the MDOT Form 222(3/99) entitled ASURVEY NOTES: RECEIPT AND TRANSMITTAL; the limits of the survey and original survey scope as determined by the consultant Surveyor and Design Engineer; a complete synopsis of the survey **that shall include, but not be limited to** horizontal and vertical control datums used, methodology, a complete discussion of government corners recovered, perpetuated or otherwise used as part of the survey, problems encountered, and a statement of certification from the consultant surveyor supervising the project as to compliance with Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated April 1, 1998; as well as documentation of all project specific meetings and /or conversations with MDOT Survey personnel.

- b. The Alignment section will contain a sketch of the alignment, witnesses and stationing of alignment points set or found; an explanation of how the alignment was determined, whether best fit or legal; and all supporting documentation.
 - c. The Control section contains the data collected and copies of all research documents used to establish the **horizontal and vertical** reference systems for the project, and includes a thorough written explanation describing how the systems were established. This section should also contain a complete list of control coordinates, control traverse raw data, least squares analysis for both traverse and benchmarks, a separate listing of control point coordinates and witnesses for mapping and construction staking of the project. A complete Benchmark list with datum, station and offset, elevation, and description of each benchmark shall also be included. This information must be submitted in hardcopy and ASCII electronic file format on 88.9 mm (3.5") HD diskettes. Also, a sketch of the control traverse, showing any ties (government corners, property, alignment, etc.) shall be included in this section.
 - d. The Property section contains all information that is utilized regarding the real property affected by the project, and all necessary property ties. This may include copies of all **recorded** land corner recordation certificates for the government corners used or reestablished, recorded plats, recorded certified surveys, tax maps, tax descriptions, and adjacent/riparian owners.
 - e. The Miscellaneous section contains any information not included in the previous sections. The surveyor's project report should specify any items included in this section.
13. A portfolio may contain several types of data but, no section is to contain more than a single type (i.e., Bridge surveys separate from Road surveys and Hydraulic surveys). All sheets in a portfolio must be marked with the control section, job number, portfolio section name and page number. Diskettes must be labeled with the control section, job number, data type and file names.
14. The Consultant representative shall record and submit typewritten minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees.
15. The MDOT Project Manager is the official contact for the Consultant. The Consultant must either address, or send a copy of all correspondence to the MDOT Project Manager. The MDOT Project Manager shall be made aware of all communications regarding this project. Any survey related questions, in regard to this project, should be directed to a Survey Consultant Coordinator.

At the completion of this survey and prior to beginning the design of this project, all field survey notes, all electronic data, and all research records obtained for this project will be considered the property of MDOT and **must be sent to** the MDOT, Design Division, Supervising Land Surveyor, P.O. Box 30050, Lansing, MI 48909. Please use MDOT's Form 222(3/99) entitled ASURVEY NOTES: RECEIPT AND TRANSMITTAL for all transmittals. A copy of this transmittal form must also be sent to the Project Manager. It is highly recommended that the project's survey portfolios be submitted for review as soon as possible.

FIELD SURVEY

The purpose of the field survey is to obtain all information and data required by the project design engineer, to leave control in the field for future construction staking, and to provide a sufficient history of the area to enable the MDOT Design Survey Unit to perform dependable surveys in the future. The consultant surveyor must discuss the scope of this survey with the project design engineer before initiating any work on this project. Notes of this meeting and a detailed Survey Work Plan with an estimate of hours broken down by specific survey task must be submitted to the Project Manager and Consultant Coordinator within two weeks of this meeting.

The consultant surveyor must contact the County Remonumentation Representative prior to beginning work on the project to inform him of proposed corner perpetuation activities, and to obtain information pertinent to PLSS corners and/or property controlling corners affected by project construction.

FINAL REPORT: DELIVERABLES

The final report for this project shall include the following:

1. In the first pocket of the first portfolio, MDOT's Form 222(3/99) entitled ASURVEY NOTES: RECEIPT AND TRANSMITTAL, and the projects Professional Surveyor's Report on company letterhead consisting of the following:
 - a. A comprehensive report, written and signed by the project's Professional Surveyor, of the work performed on this project.
 - b. The source and the methods used to establish the project horizontal coordinates, elevations, and the alignment(s) for this project.
 - c. A detailed explanation of anything discovered during the survey of this project that may create a problem for the designer or another surveyor.
2. Coordinate and witness lists for the horizontal alignment ties, government corners, traverse control points, and bench marks.

3. A sketch of the alignment with reference points and angle of crossing (if appropriate), horizontal coordinates, curve data, and a station equation to existing stationing in feet.
4. Least squares analysis for horizontal and vertical control.
5. Documentation of horizontal and vertical datum sources.
6. Control sketch with control points, government corners and alignment plotted.
7. All field survey notes, all electronic survey data files, all calculation sketches, and all research records obtained for this project. All electronic survey data files shall be submitted on 88.9 mm (3.5") HD diskettes only, specifically labeled. No paper copy of raw survey data is required.
8. Legible copies of all **recorded** Land Corner Recordation Certificates (with Liber and Page number) filed or used for the performance of this survey, and for any PLSS corners, including Property Controlling Corners, which may be disturbed by construction.
9. It is the responsibility of the consultant to insure that all electronic files submitted to MDOT conform to the required format and all documents are legible.
10. The consultant must organize and label the various sections of the portfolios as required by the MDOT Design Surveys *Standards of Practice* dated April 1, 1998.
8. It is not necessary to submit mapping data in the survey portfolio for a consultant survey/consultant design in the same authorization.

ATTACHMENT B
CS 50013 – JN 76905C
M-53 from 24 Mile to 27 Mile
Shelby Township, Washington Township, Macomb County

SCOPE OF WORK FOR DRAINAGE STUDY

The consultant is to conduct a site investigation of the drainage within the limits of the project. The purpose of this study is to determine where hydraulic analyses and/or surveys are required.

If further hydraulic analyses and/or surveys are required, then MDOT will issue a separate authorization for those services.

Work Steps:

1. Prepare a typed report summarizing the drainage affected by the project. For every culvert carrying natural drainage within the MDOT Right-of-Way, provide the following information:
 - a. Stream name
 - b. Exact location of the culvert, including Section, Town, Range, and Township
 - c. Size, type, and condition of culvert
 - d. Any evidence of scour or erosion
 - e. Any evidence that the structure is undersized
 - f. Any county drains
 - g. Photographs of the upstream face, downstream face, looking upstream, and looking downstream, as well as any drainage structures, buildings, or farmland that may affect or be affected by the culvert
 - h. Drainage area, including delineation on a USGS quadrangle map (or local contour map, if more up-to-date)
 - i. Type of work proposed, including existing and proposed lengths
2. The report must include any other effects on the drainage; for example, a raise in road grade or widening.
3. Submit the drainage study to the MDOT Project Manager for review and approval by the Design Engineer - Hydraulics/Hydrology.
4. Receive any items returned by the MDOT Project Manager as incomplete or deficient.
5. Make necessary changes and resubmit the incomplete items, including a written response to all comments.

ATTACHMENT C
CS 50013 – JN 76905C
M-53 from 24 Mile to 27 Mile
Shelby Township, Washington Township, Macomb County

VIDEO PHOTOGRAPHY SCOPE OF WORK

NOTES: The consultant shall discuss the scope of this video photography with the MDOT Project Manager before initiating any work on this project. A detailed Work Plan with estimate of hours must be included in the project proposal. This scope of work shall be part of **P/PMS TASK 3360**.

**GENERAL CONDITIONS AND SPECIFICATIONS FOR VIDEO RECORDING
STORM SEWERS:**

1. All mainline and ramp cross culverts will be video recorded.
9. Video recordings shall be performed during minimal storm water flow periods in order to maximize picture quality. The television camera and lighting shall be specifically designed for storm sewer inspection and recording. All video recordings shall be in VHS color.
10. The consultant or contractor shall provide labor, equipment, and material to clean each storm sewer necessary in order to video record a clear, precise picture of the storm sewer conditions. For the disposal of the waste generated from the cleaning refer to Supplemental Specification 403(1). The labor, equipment, and materials necessary for the cleaning shall include removal, transportation, and disposal of the debris at no extra cost. **The Department shall not be held liable for the loss or damage to any of the contractor's labor, equipment, or materials.**
11. The camera shall be moved through the line, in either direction, at a rate no greater than 9.144-meters (30-feet) per minute. Stopping may be necessary to properly document the sewer's condition. Winches, TV Cable, rewind, and other devices must not obstruct the camera view or interfere with proper documentation. If during the inspection, the camera will not pass through an entire section, the contractor shall set up his equipment to enter from the opposite opening. If again, the camera fails to pass through, the inspection shall be considered complete. The camera shall be capable of rotating from side to side to provide views of joint openings
12. All traffic control and traffic control devices to videotape shall be provided by the consultant or its contractor.

13. The contractor shall observe good housekeeping practices at all times during his operations at no extra cost.
14. In the event hazardous materials become an issue; testing and disposal fees will be negotiated separated to this agreement.

FINAL DELIVERABLES

The consultant shall provide, the Department **three (3)** copies of the video recording and written reports. Measurements of the total sewer length and locations of noted sewer defects shall be recorded on the video tape **and** on the written report describing the findings. **The consultant shall include in the written report, recommendations of storm sewer areas that need to be reconstructed. Based on these findings, MDOT will determine at which location storm sewers will be reconstructed.**

Video tapes and reports will be submitted to the MDOT Project Manager two (2) weeks prior to Base Plan submittal. The tapes shall be edited and have audio production. Once submitted, title to the tape recordings shall become the property of the Department.